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ABSTRACT

Measurement issues related to assessment of the individual in both formal and non-formal education are outlined. First, techniques to assess the educational value of life experiences (especially adults contemplating new educational or work experiences are described). The work of Ruth Ekstrom stresses deriving the dimensions of accomplishment to be assessed from the interests and background of the individual, rather than from a predetermined list of characteristics to be measured. Secondly, an attempt should be made to provide more complete and analytical information to examinees about the nature and quality of their test performance. The results of assessment in learning, whether formal or non-formal, must be communicated clearly to all students, together with aids necessary for interpretation of those results. The purpose is not to analyze the possibilities that are available in an automated society, but to fully utilize techniques that minimize high technology, which are readily available and are now being applied. (CE)

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THE INDIVIDUAL AND THE GROUP: AN ISSUE IN ASSESSMENT

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In its comparatively brief history, the field of measurement and assessment has been developed progressively to provide more adequate descriptions of both individuals and groups. Measurement of the characteristics of individuals has, in fact, captured a far greater share of the attention of educators and psychometricians than has the measurement of group characteristics. To an increasing extent, however, the measures used to provide information about individuals are designed for and administered uniformly to groups of examinees and the scores are reported uniformly to all members of the group. Little attention is given to the characteristics of individual performance beyond the bare fact of a scaled score, usually expressed in relation to a group norm.

I believe we are unintentionally and unconsciously missing a great deal of important information about the individual through the conventional process that I have just described. Not only are we missing that information -- we being those who develop and use the tests -- but, more importantly, the individual examinees themselves are missing information that would be satisfying and useful to them. The deficiencies are most serious, I believe, when those individuals are engaged in non-formal education as contrasted with education in the more conventional school classroom settings that have dominated our thinking in the designing of instruments and programs. I shall illustrate my concern by talking mainly about two areas of current work at ETS and elsewhere:

first, an attempt to develop and apply techniques to assess the educational value of life experiences -- out-of-school experiences -- of individuals, especially adults contemplating new educational or work experiences;

second, an attempt to provide more complete and analytical information to the examinee about the nature and quality of his or her test performance than is typically conveyed in a numerical score report. This latter effort is applicable whether one is looking at performance in non-formal or formal settings.

Non-Traditional Study in the U.S.

In introducing the topic of assessing the individual in non-traditional study, I should perhaps mention that concern with the topic of the older student both on and off campus is strong and fairly new in my own country. The changing pattern of interest in higher education in the United States is illustrated by the fact that colleges and universities have increased their enrollment of students over 35 years old by more than one-third over the past five years.* And many more of these students who are "older" by traditional standards are involved in non-formal education rather than regularly enrolled. Let me quote from an article by Peter Drucker that appeared this month in The Chronicle of Higher Education, a publication widely read in the United States. It illustrates the fact that non-traditional or non-formal education is a preoccupation not only in many countries that have been called underdeveloped but in some that have been called overdeveloped as well.

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*The Chronicle of Higher Education, May 4, 1981, p.3 (Article by Jack Magarrell, quoting data from U.S. Census Bureau)

Drucker's article says:

"Demand for education is actually going up, not down. What is going down, and fairly fast, is demand for traditional education in traditional schools.

"Indeed, the fastest-growing industry in America today may be the continuing professional education of highly schooled midcareer adults. Much of it takes place outside the education establishment -- through companies, hospitals, and government bureaus that run courses for managerial and professional employees; or through management associations and trade associations. Meanwhile, any number of private entrepreneurs are organizing seminars and courses, producing training films and audiotapes, and otherwise taking advantage of growth opportunities that university faculties shy away from.

"The demand for continuing education does not take the form that most observers, including this writer, originally expected -- namely 'Great Books' classes for adults wanting to learn about the humanities, the arts, the 'life of the mind.' We face instead an all but insatiable demand for advanced professional education: in engineering and medicine, in accounting and journalism, in law, and in administration and management.

"Yet the mature adults who come back for such studies also demand what teachers of professional subjects are so rarely able to supply:

a humanistic perspective that can integrate advanced professional and technical knowledge into a broader universe of experience and learning. Since these new students also need unconventional hours -- evenings, weekends, or high-intensity courses that cram a semester's work into two weeks -- their demands for learning pose a vague but real threat to academe. Academe's standard response -- producing new Ph.D.'s for a new 'department' -- is roughly comparable to restyling the buggy whip for leadership in the new market for 'horseless carriages.'

"The greatest challenge to educators is likely to come from our new opportunities for diversity. We now have the chance to apply the basic findings of psychological, developmental, and educational research over the last 100 years: namely, that no one educational method fits all children."

And, of course, neither does any one method of either education or assessment fit all adults. And this brings us back to the first area I would like to discuss: the <u>assessment</u> of life experience or non-traditional study.

1. <u>Assessment in Non-Traditional Study</u>

To illustrate an approach to this area -- assessment of life experiences or non-traditional study -- a little history of some work that we at ETS have been engaged in over the past two or three decades may be useful.

During the 1960s my colleagues and I had been watching the emergence of non-traditional study, among other innovative trends and developments

-- ideas that in many cases required new forms of assessment if they were to work. Our job is to work with the teaching institutions to devise assessment procedures that fit the new ways of teaching and learning -- that grow right out of them rather than fitting awkwardly or in any way constraining the educational process itself. Unless that is done, the forms of measurement can have a deadening effect on educational innovation. Nothing could be more unfortunate. It is imperative that assessment methods be found that will encourage flexibility rather than impede it.

Because of that belief, ETS had worked for many years to explore with the teaching institutions a variety of ways in which competency can be measured without any prescription as to the nature of the learning process that brought it about. Eleven years ago, ETS became especially active in the whole field of non-traditional study through stimulating the formation of a nationwide Commission on Non-Traditional Study which did its work in the early 1970s.

As that Commission explored the potential of the non-traditional movement, it recognized that assessment is a critical and underdeveloped aspect of unconventional programs. Indeed, at the time I said "I see assessment as the key to the success or failure of the whole non-traditional experiment, because the assessment procedures must be strong enough to satisfy and inform the student and the teacher, and strong enough too to carry what I call 'third party credibility.' This is what it so often lacks, but what it must achieve.

"Assessment in experiential learning is likely to make relatively slight use of anything recognizable as tests, I suspect. Rather, it may take the form of evaluative procedures described in some detail and followed carefully, so that the absent third party has a basis for reposing confidence in the equity and relevance of the result. If we can together devise such procedures geared intimately to the underlying educational experiences, make them explicit, and see that they gain widespread understanding, the cause of educational flexibility based on recognition of competency will be well served and the purposes of ETS will have been fulfilled."

And indeed we found that the assessment could be accomplished with some rigor in ways that hundreds of institutions are now applying, especially with students who are based off-campus. Some of the techniques are anything but new: essay exams, performance tests, interviews, ratings, objective written tests. Others involve simulations, assessment centers, and product assessment, self-assessment, and the assembly of "portfolios" in which the individual could collect, analyze and display his or her accomplishments. Our goal was to find ways to adapt these methods to nontraditional education with sufficient reliability and validity to serve as a solid base for assessment and the awarding of credit. The widespread acceptance of resulting techniques suggests that faculties and administrators find them helpful.

The point I am making in this brief recital of the methods we explored or developed is that in non-traditional education the assessment

method selected and the particular data gathered are chosen with an overall educational perspective but in such a way as to maximize attention to the special accomplishment of the individual along dimensions unique to him or her. We must, however, be able to certify to the equivalency, with regard to important and common educational objectives, of highly disparate experiences of different individuals. I do not believe we know how to do so with the precision that can be brought to the equating of scores on parallel tests, for example, but I think the effort was quite successful in achieving a useful level of stability and comparability. But I do believe that deriving the specific nature and dimensions of accomplishment to be assessed from the unique experiences of the individual is fundamental if we are to do justice to individual assessment in contrast to common practice that increasingly requires testing of all individuals on the same dimensions and on common group measures.

The area of experiential learning is now being looked at with special intensity, in the United States at least, in the case of women who are often termed "non-working" because nobody is paying them: mothers doing the work of the home. Listen to the words of Grace Hechinger, appearing in Newsweek, May 11, under the ironic title "Happy Mother's Day.":

> "Mother's job has no status in a society which rewards the single-minded pursuit of money and success...
>
> "Furthermore, mother has no credentials. She is an unpaid amateur, and this gives her low status in a society obsessed with professional, certified expertise. Whatever its past benefits, the professionalization

of child care has had the demeaning side effect of reducing mother to a bewildered consumer of expert (and often contradictory) advice. The glory has gone to an ever-increasing army of experts -- pediatricians, psychologists and social workers -- who have defined her job in terms of their own special doctrines and prejudices. Mother no longer knows best.

"Because it is done free and done by women, mother's work should not be devalued. But we all know it is. Can our society ever respect a service freely given?

"Although nearly everyone feels qualified to judge other people's children, there are no effective yardsticks by which to measure the quality of a mother's work. And there is no way of placing a monetary value on the art of bringing up children or of transferring skills needed to raise children to the 'outside' world of work."

Grace Hechinger's concern is apparent and basically correct. I thought, however, that you would be interested in knowing of the work of Ruth Ekstrom of the ETS staff, whose specific interest is in remedying the lack that Mrs. Hechinger finds: i.e., finding ways of transferring skills learned and practiced by women working in the home to the outside world of work.

Dr. Ekstrom's research is only now becoming known. Let me quote a brief non-technical account that appeared three months ago in The Washington Post, by writer Carol Krucoff under the title "CAREERS: Making Life-Work Experiences Pay Off.":

"Barbara Sudler landed a job as director of Historic Denver, Inc., on the strength of administrative experience from homemaking and volunteer work.

"Elizabeth Mohr drew on 16 years of volunteer experience -- four with the Atlanta Public Library -- to be come its public information officer.

"Patricia Bashaw combined paid work experience as a teacher and volunteer work skills to become an industrial-relations representative for Memorex in California, where she runs training and management-development programs.

"These three success stories are cited in a new workbook for women who want to change careers, enter or return to paid work after spending time as homemakers and volunteers. It is designed to help identify skills learned outside the workforce and match them with paid jobs.

"Just as hundreds of colleges now give academic credit for life-work experience,' says author Ruth Ekstrom, 'we want employers to give women credit for the skills they have developed as homemakers, mothers, community organizers and volunteer workers."

Ekstrom, a researcher at Educational Testing Service in New Jersey, says "many women have trouble finding work or settle for being

underemployed because they underrate and undervalue their own experience.

"A woman may say, 'Oh, I've just done a little volunteer work for the Sierra Club,' when, in fact, she may have investigated the environmental impact of something, reviewed legislation, drafted a sample bill and lobbied for passage. Those are highly marketable skills.

"Or they will focus on the setting in which they worked, rather than the skills they learned. For example, if a woman says she volunteered for the Red Cross, you imagine her toting bedpans. What she didn't say, but should have, is that she headed a multi-million-dollar fund-raising campaign.

"Women also tend to narrow their sights to traditional 'women's jobs," she says. "But some of the best opportunities are in non-traditional work, where employers are actively seeking women, and the pay is much better.

"A woman who's been working on the family car should consider mechanics. If a secretary is great at fixing the office copier, she should look into office machine repair. Someone who's got a green thumb may get a job with a company that maintains plants in office buildings."

The new workbook was developed as part of Project HAVE (Homemaking and Volunteer) Skills, supported by a grant from the United States Department of Education. It currently is being used and evaluated by several dozen women's centers, says Ekstrom, who hopes a revised version will be available to the public next fall.

Her advice for re-entry women, or those who want to change careers:

1. List all work you've done. Think back over everything you've done as a parent, volunteer and community member and include everything from planning and cooking meals to serving on tenants' groups or wallpapering the bathroom. Don't forget education and paid work.

2. List the things people say you're good at. Do you bake the best beans in town, have a perfectly balanced checkbook, listen well and give good advice?

3. Group items on your list into related categories. Balancing the family budget, preparing your tax return and serving as treasurer of the PTA all involve financial management. Some other categories maybe: health care, public relations/communications, teaching, arts/crafts, sales/fund-raising, clothing/textiles, mechanical/technical."

Those are steps that Dr. Ekstrom advocates for women before investigating job possibilities, whether they plan to apply on their own or use the services of an occupational counselor. The point to be emphasized is that the Ekstrom approach derives the dimensions of accomplishment to be assessed from the interests and background of the individual rather than from a predetermined list of characteristics to be measured.

2. More Complete Information to the Student

Another area in which the individual has often seemed submerged within the group is in the reporting of test scores. For some time I have felt that more complete information can and should be provided to the individual student, and increasingly we are incorporating, in the score report material going to each student, information about how that individual performed on the test as well as the score that he or she obtained.

There is nothing new, of course, about diagnostic scoring and reporting: the procedures are routine in many testing services and programs, especially those intended to serve instructional purposes in the classroom. It has not been customary, however, at least in the United States, to provide detailed information to the student in the case of large-scale nationwide external testing programs intended primarily for administrative purposes, especially selection for college or for scholarship awards.

A fairly straightforward example is the case of the Preliminary Scholastic Aptitude Test of the College Board, used in part as a component of the National Merit Scholarship Qualifying program. For the PSAT we used to report to each student simply the two scores obtained -- verbal and mathematical -- as scaled scores, together with norms tables. Since the program is a large one, given to about 1,300,000 students each year and reported on a tight schedule, the bare bones report of individual scaled score performance together

with a general interpretive booklet -- the same for everyone -- explaining the nature of the test -- seemed to be about the best we could do.

Last year, however, we found we could do a little more. The new system adopted in October, 1980 returns the test book and keyed answers to the school and the student. The individual report shows the student not only the answers keyed as correct but also the student's raw scores as well as scaled scores, the way the latter are computed, the conversion tables used, and the reasons for using scaled rather than raw scores in most reporting. It is a simple matter to have the computer tally and report to each student the number of items that he or she got right, number wrong, number omitted and number not reached, and to break those numbers down according to type of question, content of question and difficulty level.

The expanded score reports of course require more interpretive material to help the students understand the derivation and possible significance of the additional data, and there were some who feared we would be overwhelming them. By means of a questionnaire and student interviews, however, we found that the additional detail was extremely popular with counselors and with the intended primary audience, the students. They seemed to feel that we had taken the trouble to try to answer their very basic but very general question: "How did I do?"

These steps toward richer information for individual students merely scratch the surface, of course. More of the narrative statements clarifying individual performance can be printed by the computer on each individual report and keyed to the constellation of performance indices related to the particular student's work product -- the responses on the answer sheet. Such verbal reports and interpretive statements are being used in smaller programs.

One reason for my interest in seeing testing or assessment programs -- even the largest, and perhaps especially the largest -- stress more complete information to the individual is my long-standing concern with what I have called "student centered assessment."

In a 1976 paper* entitled "Power to the Person" I noted that the title was not drawn from any social or political movement but rather that it grew "... from the view that education must be person-centered, that the critical choices in education, as in all things, are best made by the individual who has to live with them, and that the results of measurement can and should be used to help learners take charge of their learning and hence of their lives.

"The main job of parents is to make themselves unnecessary, and the main job of the schools is to help develop self-sufficient people ... The systematic development of a person's ability to manage effectively and exercise his or her individuality ...[is]... a central responsibility of education."

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*ETS Annual Report, Educational Testing Service, 1976.

If this goal is to be realized, it is clear that the results of assessment in learning, whether formal or non-formal, must be communicated clearly to all students, together with the aids necessary for the interpretation of those results.

There is no time in this paper to explore other exciting prospects for improving our assessment of the individual in a system shaped and dominated by group processes. One of the most promising avenues is seen in the growth of computer-assisted testing, variously called by other names such as adaptive testing or tailored testing, in which the student's performance on a series of items determines the selection of the next item to be presented. My purpose today, however, is to lay stress not on the possibilities that are available in an automated society, which may be closer to or farther from attainment in different parts of the world, but to speak of techniques that minimize the need for high technology, are readily available, and are now being applied.

Any adequate discussion of the broad topic implied by the title of my paper would give equal time to the special needs of group measurement, defining the group as a class or a whole country or anything in between. We suffer much from the fact that typically we apply measures designed for individual assessment to problems in which the real need is for a set of descriptors of group performance -- a task which could be performed more fully and much more efficiently through matrix sampling or other techniques designed specifically for the purpose.

The primary measurement and evaluation issue to be addressed today, however, is the need for special attention to improved assessment of the individual. That's almost always the assessment issue that needs first attention, in education both formal and non-formal.